

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

5 Applicant(s): Amontov et al.
Docket No.: CH920020037US1
Serial No.: 10/539,726
Filing Date: July 19, 2006
10 Group: 1637
Examiner: Angela Marie Bertagna

Title: Surface Treatment

15

APPEAL BRIEF

20 Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

25

Sir:

In response to the Notice of Panel Decision from Pre-Appeal Brief Review, dated June 18, 2010, Applicants hereby appeal the Advisory Action Before the Filing of an 30 Appeal Brief, dated April 9, 2010, rejecting claims 1, 4-14, 17 and 20-22 of the above-identified patent application.

REAL PARTY IN INTEREST

The present application is assigned to International Business Machines 35 Corporation, as evidenced by an assignment recorded on July 20, 2006 in the United States Patent and Trademark Office at Reel 017964, Frame 0629. The assignee, International Business Machines Corporation, is the real party in interest.

RELATED APPEALS AND INTERFERENCES

40 There are no related appeals or interferences.

STATUS OF CLAIMS

The present patent application was filed on July 19, 2006 (claiming priority to International Patent Application PCT/IB2003/005129 filed on November 13, 2003 and published in English with Publication No. WO 2004/056470 A1 on July 8, 2004, under 5 PCT article 21(2), which in turn claims priority from European Application No. 02028555.7, filed on December 20, 2002) with claims 1-23, of which claims 1 and 23 were independent claims. Claims 23 was withdrawn in response to a previous restriction requirement and Applicants previously canceled claims 2, 3, 15, 16, 18 and 19 without prejudice. Claims 1, 4-14, 17 and 20-23 are presently pending.

10 Claims 1, 4-7, 9, 10, 14, 17 and 20-22 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Church (US 6,432,360) (“Church”).

Claim 8 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Church in view of Richter et al. (Advanced Materials (2000) 12(7): 507-510) (“Richter”).

15 Claims 11 and 13 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Church in view of Korlach et al. (US 2003/0044781) (“Korlach”).

Claim 12 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Church in view of Mian et al. (US 5,686,271) (“Mian”).

Claims 1, 4-14, 17 and 20-23 are being appealed.

20

STATUS OF AMENDMENTS

There have been no amendments filed subsequent to the Advisory Action dated April 9, 2010.

SUMMARY OF CLAIMED SUBJECT MATTER

25 Independent claim 1 is directed to a method of producing a monolayer of molecules on a surface, comprising:

loading a stamp with seed molecules (page 5, lines 33-36, and page 15, line 28 through page 16, line 1);

30 transferring seed molecules from the stamp to a flat surface (page 5, line 33 through page 6, line 1), wherein the transferring comprises transferring a fraction of the seed molecules loaded on the stamp to the flat surface (FIG. 1, and page 6, lines 3-10)

and wherein the transferring comprises adsorbing the seed molecules to the stamp and adsorbing the seed molecules to the flat surface (page 6, lines 3-10), the adsorption of the seed molecules to the stamp being stronger than the adsorption of the seed molecules to the flat surface (page 6, lines 3-10); and

5 self-completing amplification of the seed molecules via an amplifying reaction to produce the monolayer on the flat surface (page 5, line 33 through page 6, line 1, and page 1, lines 10-13), wherein self-completing amplification of the seed molecules via an amplifying reaction to produce the monolayer comprises producing a homogeneous area (page 6, lines 10-11, and page 17, lines 2-5), wherein the
10 homogeneous area comprises a monolayer of molecules on the flat surface (page 17, lines 2-5), and wherein the monolayer of molecules on the flat surface has no diffusive seed molecules that can relocate and destroy amplification accuracy (page 6, lines 24-35).

Claim 4 further requires wherein the amplifying comprises linear amplification of the seed molecules (page 7, lines 7-9).

15 Claim 5 further requires wherein the amplifying comprises exponential amplification of the seed molecules (page 7, lines 12-14).

Claim 6 further requires wherein the amplifying comprises directional amplification of the seed molecules (page 7, lines 15-17).

20 Claim 7 further requires wherein the seed molecules are directionally amplified to form conductive structures (page 8, lines 18-20).

Claim 8 further requires electroless plating of the directionally amplified seed molecules with a metal (page 6, lines 12-14).

Claim 9 requires wherein the directional amplification is controlled by the geometry of the seed molecule (page 8, lines 21-22).

25 Claim 10 requires wherein the directional amplification is controlled by application of an external force (page 8, lines 23-26).

Claim 11 further requires wherein the external force comprises an electrical force (page 8, lines 23-26).

30 Claim 12 further requires wherein the external force comprises a magnetic force (page 8, lines 23-26).

Claim 13 further requires wherein the external force comprises a hydrodynamic force (page 8, lines 23-26).

Claim 14 requires wherein the amplifying comprises a polymerase chain reaction (page 7, lines 7-9).

5 Claim 17 further requires wherein the amplifying comprises the use of an in vitro translation system to produce a monolayer of protein (page 10, lines 11-13).

Claim 20 further requires wherein the monolayer protects the surface from etchants (page 10, lines 16-17).

10 Claim 21 further requires wherein the monolayer comprises DNA (page 6, lines 16-18).

Claim 22 further requires repeating the transferring and amplifying on plural surfaces before reloading the stamp with seed molecules (page 6, lines 18-21).

STATEMENT OF GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

15 The present patent application was filed on July 19, 2006 (claiming priority to International Patent Application PCT/IB2003/005129 filed on November 13, 2003 and published in English with Publication No. WO 2004/056470 A1 on July 8, 2004, under PCT article 21(2), which in turn claims priority from European Application No. 02028555.7, filed on December 20, 2002) with claims 1-23, of which claims 1 and 23
20 were independent claims. Claims 23 was withdrawn in response to a previous restriction requirement and Applicants previously canceled claims 2, 3, 15, 16, 18 and 19 without prejudice. Claims 1, 4-14, 17 and 20-23 are presently pending.

Claims 1, 4-7, 9, 10, 14, 17 and 20-22 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Church (US 6,432,360) (“Church”).

25 Claim 8 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Church in view of Richter et al. (Advanced Materials (2000) 12(7): 507-510) (“Richter”).

Claims 11 and 13 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Church in view of Korlach et al. (US 2003/0044781) (“Korlach”).

30 Claim 12 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Church in view of Mian et al. (US 5,686,271) (“Mian”).

ARGUMENTS

Claim Rejections Under 35 USC §102(b)

Independent Claim 1

5 Independent claim 1 was rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Church.

As an initial matter, Applicants emphasize that, as detailed in MPEP §2131, “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. 10 v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicants respectfully submit, as detailed below, that the cited reference does not disclose each and every element of the independent claims, and as such, Applicants assert that the claims are not anticipated by the Church reference.

15 For example, Applicants respectfully submit that Church does not set forth the element of self-completing amplification of the seed molecules via an amplifying reaction to produce the monolayer on the flat surface, wherein self-completing amplification of the seed molecules via an amplifying reaction to produce the monolayer comprises producing a homogeneous area, wherein the homogeneous area comprises a monolayer of molecules on the flat surface, and wherein the monolayer of molecules on 20 the flat surface has no diffusive seed molecules that can relocate and destroy amplification accuracy.

The Advisory Action dated April 9, 2010 states that

25 the method taught by Church comprises a self-completing amplification step that falls within the scope of independent claim 1.

Specifically, the Advisory Action further states that

30 the replica transfer and amplification steps taught by Church at columns 8-15 produce a homogeneous monolayer of nucleic acid molecules having the same length that are attached to a flat surface.

Applicants respectfully traverse the above statement, and point to the Church reference, beginning on column 1, line 43, wherein it states that

[t]he invention provides a method of producing a plurality of a nucleic acid array, comprising, in order, the steps of amplifying in situ

nucleic acid molecules of a first randomly-patterned, immobilized nucleic acid array comprising a heterogeneous pool of nucleic acid molecules affixed to a support, transferring at least a subset of the nucleic acid molecules produced by such amplifying to a second support, and affixing the subset so transferred to the second support to form a second randomly-patterned, immobilized nucleic acid array, wherein the nucleic acid molecules of the second array occupy positions that correspond to those of the nucleic acid molecules from which they were amplified on the first array.... (Emphasis added)

Further, Applicants note that beginning on column 1, line 64, Church teaches that

[a]s used herein, the terms "randomly-patterned" or "random" refer to a non-ordered, non-Cartesian distribution (in other words, not arranged at pre-determined points along the x- and y axes of a grid or at defined 'clock positions', degrees or radii from the center of a radial pattern) of nucleic acid molecules over a support, that is not achieved through an intentional design (or program by which such a design may be achieved) or by placement of individual nucleic acid features. Such a "randomly-patterned" or "random" array of nucleic acids may be achieved by dropping, spraying, plating or spreading a solution, emulsion, aerosol, vapor or dry preparation comprising a pool of nucleic acid molecules onto a support and allowing the nucleic acid molecules to settle onto the support without intervention in any manner to direct them to specific sites thereon. (Emphasis added)

Applicants respectfully submit that such a "randomly-patterned" array of molecules allowed to settle on the support wherever they may fall does is wholly distinct from the active claimed step of producing a homogeneous area comprising a monolayer of molecules, as explicitly taught in independent claim 1. Support for this element can be found, for example, in FIG. 1 as well as page 9, line 10 through page 10, line 18.

Additionally, Applicants assert Church discloses techniques using swollen gels as the soft transfer medium (for example, polyacrylamide, cellulose, polyamide (nylon) and cross linked agarose, dextran, and polyethylene glycol). (See, column 9, lines 26-27 ("a semi-solid medium (such as a polyacrylamide gel)"). Applicants respectfully submit that all such materials require a large fraction of water to be able to adsorb nucleic acids in the matrix. Applicants also submit that self-completing amplification cannot exist in a setting such as taught by Church because the surface in a gel is larger than on a flat surface such that it would not be possible to saturate the gel matrix and run into a self-completion.

Additionally, the Advisory Action continues to state that

The teachings of Church at columns 9 and 15, in contrast to Applicant's arguments, indicate that the seed molecules transferred in the method of Church cannot relocate and destroy amplification accuracy, since each different seed molecule is confined to a particular area of the flat surface.

Applicants respectfully traverse this assertion as well, and point to column 9, lines 32-34, wherein Church explicitly teaches that

a molecule that is immobilized at one end can, at most, diffuse the distance of a single molecule length during each round of replication. (Emphasis added)

Additionally, on column 15, lines 58-60, Church further teaches that

a replica serves as a master for subsequent steps like step 4, limited by the diffusion of the features and the desired feature resolution. (Emphasis added)

Applicants respectfully submit that the limitations cited in the Church reference are distinct from those explicitly taught in independent claim 1. Claim 1 expressly teaches "the monolayer of molecules on the flat surface has no diffusive seed molecules that can relocate and destroy amplification accuracy." (Emphasis added)

Also, with respect to the accuracy element, column 11, lines 60-61 of Church acknowledges that "it is expected that a certain degree of mismatch at the priming site is tolerated." Additionally, column 30, lines 6-14 of the Church reference states that

[a]nneling temperature and timing are determined both by the efficiency with which a primer is expected to anneal to a template and the degree of mismatch that is to be tolerated. In attempting to amplify a mixed population of molecules, the potential loss of molecules having target sequences with low melting temperatures under stringent (high-temperature) annealing conditions against the promiscuous annealing of primers to sequences other than their target sequence is weighed. (Emphasis added)

Applicants point to the specification (for example, at page 14, lines 25-28), wherein it describes that primers are prevented from lateral diffusion through anchors on the source surface as well as on the target surface and also during the self-completing amplification. As taught in claim 1, the self-completing amplification process is performed and without that the primers become diffusible. As such, the techniques can

be performed on a flat surface directly exposed to the soluble fraction of the replication mix with no need for a compartmentalization during the replication process.

As such, for at least the reasons detailed above, Applicants respectfully submit that Church does not set forth the claimed elements of producing a “monolayer comprises 5 producing a homogeneous area, wherein the homogeneous area comprises a monolayer of molecules on the flat surface, and wherein the monolayer of molecules on the flat surface has no diffusive seed molecules that can relocate and destroy amplification accuracy.”

Consequently, Applicants respectfully submit that Church does not teach or suggest all of the limitations of claim 1. “A claim is anticipated only if each and every 10 element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Thus, Applicants respectfully request withdrawal of the section 102 rejection of 15 independent claim 1.

Dependent Claims

Because independent claim 1 is patentable, dependent claims 4-7, 9, 10, 14, 17 and 20-22 which depend from independent claim 1, include all limitations of independent 20 claim 1 and are therefore also patentable. Certain dependent claims are also independently patentable for the features provided therewith, in combination with the limitations provided by independent claim 1.

For example, regarding the Examiner’s assertions in connection with claim 4 (see page 4, the Office Action dated January 21, 2010), Applicants respectfully traverse the 25 Examiner’s statement that “where reverse transcription is a type of linear amplification.” Applicants note that Church teaches the use of reverse transcription not as a type of amplification, but rather as a means to create reverse transcripts which are the subject of an amplification process themselves. For example, column 5, lines 56-57 of the Church references expressly teaches that “[i]t is preferred that the method further comprises the 30 step of amplifying the reverse transcripts.” Consequently, Applicants respectfully submit that Church does not teach or suggest all of the limitations of claim 4.

Regarding the Examiner's assertions in connection with claims 17, 20 and 21 (see page 5 of the same Office Action dated January 21, 2010), Applicants note that, as detailed above, Church teaches producing a "randomly-patterned" array of molecules allowed to settle on the support wherever they may fall does, precluding the teaching of the active claimed step of producing a homogeneous area comprising a monolayer of molecules, as explicitly taught in independent claim 1. Consequently, Church cannot properly anticipate claims 17, 20 and 21 which include additional limitations on the noted monolayer of molecules.

Regarding the Examiner's assertions in connection with claim 22 (see page 5 of the same Office Action), Applicants respectfully traverse the statement that

Church teaches repeating the transferring and amplifying steps on a plurality of surfaces before reloading the stamp with seed molecules (see, for example, column 3, lines 58-63).

Applicants note that column 3, lines 58-63 of the Church reference teach that the method further comprises, after the step of transferring at least a subset of the nucleic acid molecules produced by amplifying the molecules of the first array to a second support, the step of transferring and affixing at least a subset of the molecules transferred to the second support to a third support. (Emphasis added)

Applicants respectfully assert that Church teaches taking molecules already placed on a support and transferring a subset of those molecules to a different support. This appears to be an independent step in the process, as opposed to a repetition of the original transfer and amplification steps, as taught in claim 22. Additionally, the cited passage from Church makes no mention of reloading the stamp with seed molecules.

Claim Rejections Under 35 U.S.C. §103(a)

Claim 8 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Church in view of Richter.

Applicants respectfully submit that, as detailed above, Church does not teach or suggest every claim limitation of independent claim 1. For example, Church does not teach or suggest the limitation of self-completing amplification of the seed molecules via an amplifying reaction to produce the monolayer on the flat surface, wherein self-

completing amplification of the seed molecules via an amplifying reaction to produce the monolayer comprises producing a homogeneous area, wherein the homogeneous area comprises a monolayer of molecules on the flat surface, and wherein the monolayer of molecules on the flat surface has no diffusive seed molecules that can relocate and 5 destroy amplification accuracy. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Furthermore, if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

10 Further, with respect to the rejection of dependent claim 8, Applicants respectfully submit that there exists a lack of motivation to combine these two references. By way of example, DNA replicated in a gel (as taught in Church) cannot be metallized in a similar fashion such as taught in Richter. Page 3 of the Advisory Action dated April 9, 2010 states that

15 the methods of Church are not limited to gels. Rather, gels are only an exemplary embodiment of the methods of Church, who also teaches flat surfaces upon which metallization can occur (see, for example, column 4, lines 25-30, where Church teaches the use of nylon or cellulose surfaces).

20 Applicants respectfully note that column 4, lines 25-30 of the Church references discloses that “[i]t is preferred that the support is semi-solid.” (See, line 25). Further, as explicitly taught on column 3, lines 21-24

25 [a]s used herein, the term “semi-solid” refers to a compressible matrix with both a solid and a liquid component, wherein the liquid occupies pores, spaces or other interstices between the solid matrix elements. (Emphasis added)

Consequently, the motivation for one of ordinary skill in the art to combine these 30 two references is lacking, as Applicants respectfully submit, as noted above, that such materials require a large fraction of water to be able to adsorb nucleic acids in the matrix, and that self-completing amplification cannot exist in a setting such as taught by Church because the surface in a gel is larger than on a flat surface such that it would not be possible to saturate the gel matrix and run into a self-completion.

Additionally, claims 11 and 13 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Church in view of Korlach.

Applicants respectfully submit that, as detailed above, Church does not teach or suggest every claim limitation of independent claim 1. For example, Church does not
5 teach or suggest the limitation of self-completing amplification of the seed molecules via an amplifying reaction to produce the monolayer on the flat surface, wherein self-completing amplification of the seed molecules via an amplifying reaction to produce the monolayer comprises producing a homogeneous area, wherein the homogeneous area comprises a monolayer of molecules on the flat surface, and wherein the monolayer of
10 molecules on the flat surface has no diffusive seed molecules that can relocate and destroy amplification accuracy. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Furthermore, if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is
15 nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Further, with respect to the rejection of dependent claims 11 and 13, Applicants respectfully submit that the motivation for one of ordinary skill in the art to combine these two references is lacking because Korlach teaches away from an amplification step.

Paragraph [0040] of the Korlach references teaches that

20 [t]he sequencing process of the present invention can be used to determine the sequence of any nucleic acid molecule.

Paragraph [0018] states that

25 [n]umerous advantages are achieved with the present invention. Sequencing can be carried out with small amounts of nucleic acid, with the capability of sequencing single nucleic acid template molecules which eliminates the need for amplification prior to initiation of sequencing.
(Emphasis added)

30 Further, in cited paragraph [0060], Korlach does not teach controlling amplification by way of electrical or hydrodynamic force, but rather teaches

35 the succession of steps (outlined in FIG. 2) that is used to carry out the sequencing procedure of the present invention. In essence, in this procedure, an incorporated nucleotide analog will be distinguished from unincorporated ones (randomly diffusing through the volume of

observation or being convected through it by hydrodynamic or electrophoretic flow) by analyzing the time trace of fluorescence for each distinguishable label simultaneously. (Emphasis)

5 Consequently, Applicants respectfully submit that there would be no proper motivation to combine these two references because of the distinct objectives of nucleic acid sequencing versus replica amplification, and further, even if combined, the two references nonetheless do not teach or suggest the claimed elements of claims 11 and 13.

10 Also, claim 12 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Church in view of Mian.

Applicants respectfully submit that, as detailed above, Church does not teach or suggest every claim limitation of independent claim 1. For example, Church does not teach or suggest the limitation of self-completing amplification of the seed molecules via 15 an amplifying reaction to produce the monolayer on the flat surface, wherein self-completing amplification of the seed molecules via an amplifying reaction to produce the monolayer comprises producing a homogeneous area, wherein the homogeneous area comprises a monolayer of molecules on the flat surface, and wherein the monolayer of molecules on the flat surface has no diffusive seed molecules that can relocate and 20 destroy amplification accuracy. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Furthermore, if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

25

Thus, Applicants respectfully request withdrawal of the section 103 rejections of the noted claims.

Conclusion

30 The rejections of the cited claims under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) are therefore believed to be improper and should be withdrawn. The remaining rejected

dependent claims are believed allowable for at least the reasons identified above with respect to the independent claims.

The attention of the Examiner and the Appeal Board to this matter is appreciated.

5

Respectfully submitted,



Date: July 19, 2010

10

Michael J. Cooper
Attorney for Applicants
Reg. No. 57,749
Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06824
(203) 255-6560

CLAIMS APPENDIX

1. A method for producing a monolayer of molecules on a surface, the method comprising:

5 loading a stamp with seed molecules;

transferring seed molecules from the stamp to a flat surface, wherein the transferring comprises transferring a fraction of the seed molecules loaded on the stamp to the flat surface and wherein the transferring comprises adsorbing the seed molecules to the stamp and adsorbing the seed molecules to the flat surface, the adsorption of the seed molecules to the stamp being stronger than the adsorption of the seed molecules to the flat surface; and

10 self-completing amplification of the seed molecules via an amplifying reaction to produce the monolayer on the flat surface, wherein self-completing amplification of the seed molecules via an amplifying reaction to produce the monolayer comprises producing a homogeneous area, wherein the homogeneous area comprises a monolayer of molecules on the flat surface, and wherein the monolayer of molecules on the flat surface has no diffusive seed molecules that can relocate and destroy amplification accuracy.

15 20 2. (Canceled)

25 3. (Canceled)

4. 25 A method as claimed in claim 1, wherein the amplifying comprises linear amplification of the seed molecules.

5. A method as claimed in claim 1, wherein the amplifying comprises exponential amplification of the seed molecules.

30 6. A method as claimed in claim 1, wherein the amplifying comprises directional amplification of the seed molecules.

7. A method as claimed in claim 6, wherein the seed molecules are directionally amplified to form conductive structures.

5 8. A method as claimed in claim 6, comprising electroless plating of the directionally amplified seed molecules with a metal.

9. A method as claimed in claim 6, wherein the directional amplification is controlled by the geometry of the seed molecule.

10 10. A method as claimed in claim 6, wherein the directional amplification is controlled by application of an external force.

15 11. A method as claimed in claim 10, wherein the external force comprises an electrical force.

12. A method as claimed in claim 10, wherein the external force comprises a magnetic force.

20 13. A method as claimed in claim 10, wherein the external force comprises a hydrodynamic force.

14. A method as claimed in claim 1, wherein the amplifying comprises a polymerase chain reaction.

25 15. (Canceled)

16. (Canceled)

30 17. A method as claimed in claim 1, wherein the amplifying comprises the use of an in vitro translation system to produce a monolayer of protein.

18. (Canceled)

19. (Canceled)

5

20. A method as claimed in claim 1, wherein the monolayer protects the surface from etchants.

21. A method as claimed in claim 1, wherein the monolayer comprises DNA.

10

22. A method as claimed in claim 1, comprising repeating the transferring and amplifying on plural surfaces before reloading the stamp with seed molecules.

23. (Withdrawn) A biosensor comprising surface treated with a method as claimed in

15 claim 1.

EVIDENCE APPENDIX

There is no evidence submitted pursuant to § 1.130, 1.131, or 1.132 or entered by the Examiner and relied upon by appellant.

RELATED PROCEEDINGS APPENDIX

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 CFR 41.37.